

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 June 2002 (20.06.2002)

PCT

(10) International Publication Number
WO 02/047532 A3

(51) International Patent Classification⁷: **A61B 17/34**

(21) International Application Number: PCT/IL01/01019

(22) International Filing Date:
4 November 2001 (04.11.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/254,689 11 December 2000 (11.12.2000) US
PCT/IL01/00069 24 January 2001 (24.01.2001) IL
PCT/IL01/00074 25 January 2001 (25.01.2001) IL
PCT/IL01/00266 20 March 2001 (20.03.2001) IL
PCT/IL01/00267 20 March 2001 (20.03.2001) IL
PCT/IL01/00600 28 June 2001 (28.06.2001) IL
144051 28 June 2001 (28.06.2001) IL

(71) Applicant (for all designated States except US):
BY-PASS, INC. [US/US]; 40 Ramland Road, Orangebury,
NY 10962 (US).

(71) Applicants and

(72) Inventors: **LOSHAKOVE, Amir** [IL/IL]; P.O. Box 378,
60944 Moshav-Bazra (IL). **KILEMNIK, Ido** [IL/IL]; 35
Nordau Street, 46585 Herzelia (IL).

(74) Agents: **FENSTER, Paul** et al.; Fenster and Company
Patent Attorneys Ltd., P.O. Box 10256, 49002 Petach Tikva
(IL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,
TG).

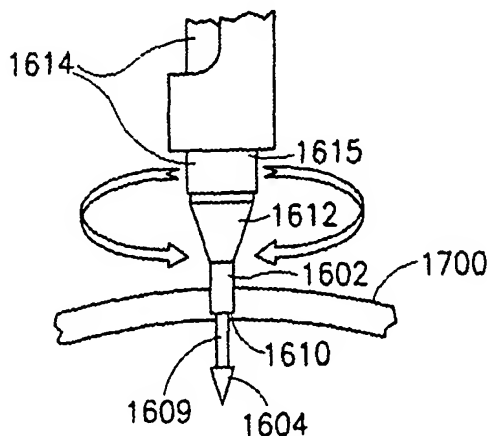
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
26 September 2002

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: METHOD AND APPARATUS FOR FORMING APERTURES IN BLOOD VESSELS



(57) Abstract: A hole former (1600) including a penetration tip which
retracts after the tip is inserted through a blood vessel wall (1700), a
penetration head (1604) that passes through the wall and a base (1602)
that does not pass through the wall. A cutting tip is provided on the base,
to cut the vessel wall. Once the cutting is complete, the penetration head
is retracted relative to the blood vessel thus removing a plug cut from a
vessel.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL01/01019**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : A61B 17/34

US CL : 606/185

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 606/185

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

E.A.S.T
606/185**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,192,294 A (BLAKE, III) 09 MARCH 1993, see entire document.	1-4, 7-8, 11-18, 21, 23 and 25-38
Y	US 3,837,345 A (MATAR) 24 September 1974, see entire document.	1-4, 7, 21 28-30 and 33-38
A	US 5,403,338 A (MILO) 04 April 1995, see entire document.	1-38
A	US 5,824,002 A (GENTELIA et al) 20 October 1998, see entire document.	1-38
A	US 4,018,228 A (GOOSEN) 19 April 1977, see Abstract of the Disclosure.	1-38



Further documents are listed in the continuation of Box C.



See patent family annex.

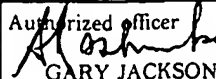
* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

29 MAY 2002

Date of mailing of the international search report

09 AUG 2002

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231Authorized officer

GARY JACKSON